

Amendments to the Claims

The listing of claims below will replace all prior versions and listings of claims in the present application.

Claim Listing

1 1. (Currently Amended) An apparatus for recording and displaying holographic
2 stereograms comprising:
3 a light source that produces a coherent beam;
4 a beam splitter that splits the coherent beam into an object beam and a reference
5 beam;
6 an object beam optical system for directing the object beam to interfere with the
7 reference beam at an updateable holographic recording material;
8 a reference beam optical system for directing the reference beam to interfere with
9 the object beam at the updateable holographic recording material;
10 a material holder holding the updateable holographic recording material, wherein
11 the material holder includes:
12 a material supply portion; and
13 a material take-up portion, wherein the updateable holographic recording
14 material further comprises a flexible film disposed on the material
15 supply and material take-up portions; and
16 an illumination source oriented with respect to the updateable holographic
17 recording material so as to illuminate at least one hogel recorded in the
18 updateable holographic recording material for viewing by a user.

1 2. (Original) The apparatus of claim 1 wherein the updateable holographic
2 recording material further comprises at least one hogel region, wherein the at least one
3 hogel region is operable to store the at least one hogel and substantially erase the at least
4 one hogel so that at least another hogel can be stored in the at least one hogel region.

1 3. (Original) The apparatus of claim 2 wherein at least one of a voltage source, a
2 heat source, the light source that produces a coherent beam, and a second light source is

3 used to substantially erase the at least one hogel so that at least another hogel can be
4 stored in the at least one hogel region.

1 4. (Original) The apparatus of claim 2 wherein the at least one hogel region is
2 operable to substantially erase the at least one hogel using a natural decay property of the
3 updateable holographic recording material.

1 5. (Currently Amended) The apparatus of claim 1 wherein the updateable
2 holographic recording material ~~further~~ comprises at least one of a photopolymer, a
3 photorefractive material, a chalcogenide compounds, a thermally-deformable material, a
4 liquid crystal material, polymer-dispersed liquid crystal material, and an optically
5 addressable spatial light modulator.

1 6. (Cancelled)

1 7. (Original) The apparatus of claim 1 wherein the updateable holographic
2 recording material further comprises:
3 a first hogel region, wherein the first hogel region is operable to store the at least
4 one hogel; and
5 a second hogel region wherein the second hogel region is operable to store an
6 updated version of the at least one hogel.

1 8. (Original) The apparatus of claim 1 wherein the updateable holographic
2 recording material further comprises at least one substrate coupled to the updateable
3 holographic recording material.

1 9. (Original) The apparatus of claim 8 wherein the at least one substrate coupled
2 to the updateable holographic recording material includes at least one electrode.

1 10. (Original) The apparatus of claim 1 wherein the object beam optical system
2 includes a spatial light modulator for intensity modulating the object beam.

1 11. (Currently Amended) The apparatus of claim 1 further comprising:
2 a computer coupled to the spatial light modulator and programmed to control
3 delivery of a rendered image to the spatial light modulator.

1 12. (Original) The apparatus of claim 1 further comprising:
2 an object beam optical system translation system operable to position the object
3 beam optical system with respect to the updateable holographic recording
4 material.

1 13. (Original) The apparatus of claim 1 further comprising:
2 a reference beam optical system translation system operable to position the
3 reference beam optical system with respect to the updateable holographic
4 recording material.

1 14. (Original) The apparatus of claim 1 wherein the light source that produces a
2 coherent beam is a pulsed laser.

1 15-26. (Cancelled)

1 27. (New) An apparatus for recording and displaying holographic stereograms
2 comprising:
3 a light source that produces a coherent beam;
4 a beam splitter that splits the coherent beam into an object beam and a reference
5 beam;
6 an object beam optical system for directing the object beam to interfere with the
7 reference beam at an updateable holographic recording material, wherein
8 the updateable holographic recording material further comprises at least
9 one substrate coupled to the updateable holographic recording material;
10 a reference beam optical system for directing the reference beam to interfere with
11 the object beam at the updateable holographic recording material;
12 a material holder holding the updateable holographic recording material; and

13 an illumination source oriented with respect to the updateable holographic
14 recording material so as to illuminate at least one hogel recorded in the
15 updateable holographic recording material for viewing by a user.

1 28. (New) The apparatus of claim 27 wherein the updateable holographic
2 recording material further comprises at least one hogel region, wherein the at least one
3 hogel region is operable to store the at least one hogel and substantially erase the at least
4 one hogel so that at least another hogel can be stored in the at least one hogel region.

1 29. (New) The apparatus of claim 28 wherein at least one of a voltage source, a
2 heat source, the light source that produces a coherent beam, and a second light source is
3 used to substantially erase the at least one hogel so that at least another hogel can be
4 stored in the at least one hogel region.

1 30. (New) The apparatus of claim 28 wherein the at least one hogel region is
2 operable to substantially erase the at least one hogel using a natural decay property of the
3 updateable holographic recording material.

1 31. (New) The apparatus of claim 27 wherein the updateable holographic
2 recording material comprises at least one of a photopolymer, a photorefractive material, a
3 chalcogenide compounds, a thermally-deformable material, a liquid crystal material,
4 polymer-dispersed liquid crystal material, and an optically addressable spatial light
5 modulator.

1 32. (New) The apparatus of claim 27 wherein the material holder further
2 comprises:
3 a material supply portion; and
4 a material take-up portion, wherein the updateable holographic recording material
5 further comprises a flexible film disposed on the material supply and
6 material take-up portions.

1 33. (New) The apparatus of claim 27 wherein the updateable holographic
2 recording material further comprises:
3 a first hogel region, wherein the first hogel region is operable to store the at least
4 one hogel; and
5 a second hogel region wherein the second hogel region is operable to store an
6 updated version of the at least one hogel.

1 34. (New) The apparatus of claim 27 wherein the at least one substrate coupled
2 to the updateable holographic recording material includes at least one electrode.

1 35. (New) The apparatus of claim 27 wherein the object beam optical system
2 includes a spatial light modulator for intensity modulating the object beam.

1 36. (New) The apparatus of claim 35 further comprising:
2 a computer coupled to the spatial light modulator and programmed to control
3 delivery of a rendered image to the spatial light modulator.

1 37. (New) The apparatus of claim 27 further comprising:
2 an object beam optical system translation system operable to position the object
3 beam optical system with respect to the updateable holographic recording
4 material.

1 38. (New) The apparatus of claim 27 further comprising:
2 a reference beam optical system translation system operable to position the
3 reference beam optical system with respect to the updateable holographic
4 recording material.

1 39. (New) The apparatus of claim 27 wherein the light source that produces a
2 coherent beam is a pulsed laser.